

Journal Contents

Volume 37, 1958

	Page		Page
January		"Three-Dimensional Tape-Controlled Inspection" by H. J. Elton, A.M.I.Prod.E.	180
"New Year Thoughts" by The Rt. Hon. The Earl of Halsbury, President of the Institution ...	1	"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part I) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	187
<i>The 1957 Sir Alfred Herbert Paper</i>		Report of the Meeting of Council — 30th January, 1958 ...	192
"The Bases of Measurement" by H. Barrell, D.Sc., A.R.C.S., F.Inst.P.	3	The Extraordinary General Meeting — 30th January, 1958 ...	194
Report and Discussion ...	19	Report of the Annual General Meeting — 30th January, 1958 ...	195
"The Engineering Graduate — A Production Problem" by L. J. Kastner, M.A., M.Sc., M.I.Mech.E.	36	Elections and Transfers ...	197
"The Varied Application of Drilling Machines in Relation to Other Production" by W. A. Hannaby, M.I.Prod.E.	42	The New Associate Membership Examination ...	199
PERA Newsletter ...	50	News of Members ...	202
Materials Handling Group — Meeting of Region and Section Representatives ...	52	Institution Diary for 1958 ...	203
Institution Notes ...	53	Obituaries — Mr. F. G. Woollard, M.B.E.; Mr. Alastair McLeod; Mr. G. A. Firkins ...	204
Materials Handling Convention, 1957 ...	54		
News of Members ...	56	April	
Associate Membership Examination, 1957 — Pass List ...	57	<i>The 1957 Viscount Nuffield Paper</i>	
Hazleton Memorial Library — Additions ...	58	"Technical Education for Production Engineers" by The Rt. Hon. The Lord Hives, C.H., M.B.E., D.Sc., LL.D.	207
Notice of Extraordinary General Meeting ...	59	Report and Discussion ...	217
Notice of Annual General Meeting ...	59	Correspondence ...	223
Minutes of Annual General Meeting — 31st January, 1957 ...	60	<i>Sixth Conference on Aircraft Production</i>	
Report of Election of Members to Council — 1957 - 1958 ...	61	<i>Session III</i>	
Report of Council — 1st July, 1956 - 30th June, 1957 ...	62	"Some Aspects of the Design, Development and Manufacture of the P1 Wing" by F. Bradford, A.F.R.Ae.S., and G. H. Taylor ...	226
		Report and Discussion ...	245
February		<i>Session IV</i>	
<i>The 1957 James N. Kirby Paper</i>		Combined Discussion ...	248
"Operation Future — The Engineer in a Changing World" by Walter Scott ...	73	"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part II) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	257
"The Mathematics of Handling" by Dr. K. D. Tocher ...	84	Notice of Council Elections, 1958 - 1959 ...	264
"The Manufacture and Application of Tungsten Carbide in Australia" by W. J. Kelsey, A.M.I.Mech.E., A.M.I.Prod.E.	91	PERA Newsletter ...	265
"Work Measurement and Its Uses for Management Control" by Walter Hewett, A.M.I.Mech.E., M.I.Prod.E., A.I.I.A., M.Amer.S.M.E.	105	Extracts from Region and Section Reports ...	267
Correspondence ...	116	Institution Notes ...	273
Institution Notes ...	117	News of Members ...	274
News of Members ...	118	Hazleton Memorial Library — Additions ...	275
Institution Diary for 1958 ...	119		
Hazleton Memorial Library—Periodicals Currently Received ...	120	May	
		"Technical Training and Professional Status" by The Rt. Hon. The Earl of Halsbury, F.R.I.C., F.Inst.P., M.I.Prod.E.	277
March		"A New Approach to Production Control" by J. L. Burbidge, A.M.I.Prod.E., A.M.B.I.M.	288
<i>Sixth Annual Conference on "Problems of Aircraft Production"</i>		"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part III) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	303
Addresses at Opening Luncheon ...	125	"The Mixing of Concrete" by C. B. Abbey, A.M.I.Mech.E., M.I.Prod.E.	314
Conference Programme ...	128	"Organisation and Management of the Production Unit" — A Thesis by E. W. Dixon, A.M.I.Prod.E.	324
<i>Session I (The Lord Sempill Paper)</i>		News of Members ...	334
"Manufacturing in the Aeronautic Age" by Boyd K. Bucey ...	138	Obituary — Mr. G. A. Firkins, M.I.Prod.E.	335
<i>Session II</i>		Hazleton Memorial Library — Additions ...	336
"Manufacturing Practice" — A review of British aircraft industry—by L. G. Burnard, M.I.Prod.E., A.F.R.Ae.S.	139	Institution Diary for 1958 ...	338
Report and Discussion ...	174		

Journal Contents

Volume 37, 1958

	Page		Page
January		"Three-Dimensional Tape-Controlled Inspection" by H. J. Elton, A.M.I.Prod.E.	180
"New Year Thoughts" by The Rt. Hon. The Earl of Halsbury, President of the Institution ...	1	"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part I) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	187
<i>The 1957 Sir Alfred Herbert Paper</i>		Report of the Meeting of Council — 30th January, 1958 ...	192
"The Bases of Measurement" by H. Barrell, D.Sc., A.R.C.S., F.Inst.P.	3	The Extraordinary General Meeting — 30th January, 1958 ...	194
Report and Discussion ...	19	Report of the Annual General Meeting — 30th January, 1958 ...	195
"The Engineering Graduate — A Production Problem" by L. J. Kastner, M.A., M.Sc., M.I.Mech.E.	36	Elections and Transfers ...	197
"The Varied Application of Drilling Machines in Relation to Other Production" by W. A. Hannaby, M.I.Prod.E.	42	The New Associate Membership Examination ...	199
PERA Newsletter ...	50	News of Members ...	202
Materials Handling Group — Meeting of Region and Section Representatives ...	52	Institution Diary for 1958 ...	203
Institution Notes ...	53	Obituaries — Mr. F. G. Woollard, M.B.E.; Mr. Alastair McLeod; Mr. G. A. Firkins ...	204
Materials Handling Convention, 1957 ...	54		
News of Members ...	56	April	
Associate Membership Examination, 1957 — Pass List ...	57	<i>The 1957 Viscount Nuffield Paper</i>	
Hazleton Memorial Library — Additions ...	58	"Technical Education for Production Engineers" by The Rt. Hon. The Lord Hives, C.H., M.B.E., D.Sc., LL.D.	207
Notice of Extraordinary General Meeting ...	59	Report and Discussion ...	217
Notice of Annual General Meeting ...	59	Correspondence ...	223
Minutes of Annual General Meeting — 31st January, 1957 ...	60	<i>Sixth Conference on Aircraft Production</i>	
Report of Election of Members to Council — 1957-1958 ...	61	<i>Session III</i>	
Report of Council — 1st July, 1956-30th June, 1957 ...	62	"Some Aspects of the Design, Development and Manufacture of the P1 Wing" by F. Bradford, A.F.R.Ae.S., and G. H. Taylor ...	226
		Report and Discussion ...	245
February		<i>Session IV</i>	
<i>The 1957 James N. Kirby Paper</i>		Combined Discussion ...	248
"Operation Future — The Engineer in a Changing World" by Walter Scott ...	73	"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part II) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	257
"The Mathematics of Handling" by Dr. K. D. Tocher ...	84	Notice of Council Elections, 1958-1959 ...	264
"The Manufacture and Application of Tungsten Carbide in Australia" by W. J. Kelsey, A.M.I.Mech.E., A.M.I.Prod.E.	91	PERA Newsletter ...	265
"Work Measurement and Its Uses for Management Control" by Walter Hewett, A.M.I.Mech.E., M.I.Prod.E., A.I.I.A., M.Amer.S.M.E.	105	Extracts from Region and Section Reports ...	267
Correspondence ...	116	Institution Notes ...	273
Institution Notes ...	117	News of Members ...	274
News of Members ...	118	Hazleton Memorial Library — Additions ...	275
Institution Diary for 1958 ...	119		
Hazleton Memorial Library—Periodicals Currently Received ...	120	May	
		"Technical Training and Professional Status" by The Rt. Hon. The Earl of Halsbury, F.R.I.C., F.Inst.P., M.I.Prod.E.	277
March		"A New Approach to Production Control" by J. L. Burbidge, A.M.I.Prod.E., A.M.B.I.M.	288
<i>Sixth Annual Conference on "Problems of Aircraft Production"</i>		"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part III) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	303
Addresses at Opening Luncheon ...	125	"The Mixing of Concrete" by C. B. Abbey, A.M.I.Mech.E., M.I.Prod.E.	314
Conference Programme ...	128	"Organisation and Management of the Production Unit" — A Thesis by E. W. Dixon, A.M.I.Prod.E.	324
<i>Session I (The Lord Sempill Paper)</i>		News of Members ...	334
"Manufacturing in the Aeronautic Age" by Boyd K. Bucey ...	138	Obituary — Mr. G. A. Firkins, M.I.Prod.E.	335
<i>Session II</i>		Hazleton Memorial Library — Additions ...	336
"Manufacturing Practice" — A review of British aircraft industry—by L. G. Burnard, M.I.Prod.E., A.F.R.Ae.S.	139	Institution Diary for 1958 ...	338
Report and Discussion ...	174		

June

"The New Industrial Pattern of South Wales" by A. J. Nicholas, M.I.E.E., Assoc.M.C.T.	339
"Current Experimental Work with Sintered Oxide as a Cutting Tool" by H. Eckersley, M.I.Mech.E., M.I.Prod.E., and R. N. Cook, A.M.I.Mech.E., M.I.Prod.E.	341
"Carbide and Ceramic Tools in the Finish Turning of Steel" — A Comparative Investigation — by Vladimir Solaja	363
"Production Problems Associated with Industrial Atomic Energy" by Dr. J. E. Littlechild	373
Discussion	380
"Output Pattern in Repetitive Tasks" — with special reference to Compensating Relaxation Allowances (Part IV) by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	382
Report of the Meeting of Council — 24th April, 1958	385
Elections and Transfers	387
Extracts from Region and Section Reports	389
Institution Notes	395
News of Members	396
Institution Diary for 1958	396

July

"Business Financing and the Stock Exchange" by Gordon Cummings	397
<i>The 1957 George Bray Memorial Lecture</i>	
"The Fabrication of Plastics" by Dr. V. E. Yarsley, M.Sc., D.Sc.Tech.(Zurich), F.R.I.C., F.P.I., M.I.Chem.E.	402
Report and Discussion	442
"Air Gauging—History and Future Developments" by C. J. Tanner	448
The Principal Officers, 1958 - 1959	463
News of Members	464
Obituary—Mr. F. T. Nurrish, M.B.E., M.I.Prod.E.	465
Hazleton Memorial Library — Additions	466

August

1960 Associate Membership Examinations Exemptions	467
<i>Compressed Air Conference Papers</i>	
"Air-Operated Equipment" by N. P. Watts	471
"Fire and Explosion Hazards in Compressed Air Systems" by A. C. Smith, B.Sc., and A. Thomas, Ph.D., B.Sc.	482
"Industrial Uses of Rotary Compressors" by J. Hodge, M.A., M.I.Mech.E., A.F.R.Ae.S., M.A.S.M.E.	490
"Batch Production of Piston Type Hydraulic Control Valves" by J. H. Cross, A.M.I.Prod.E.	500
"The Heating and Ventilating of Factories" — A review of developments and methods — by F. Carter	510
PERA Newsletter	523
Institution Notes	524
News of Members	526
Hazleton Memorial Library — Additions	527
Institution Diary for 1958	509

September

Vires Acquirat Eundo	531
<i>The 1958 E. W. Hancock Paper</i>	
"Human Relations in Industry — Men, Women and Work" by Lewis T. Wright	532
Report and Discussion	536
"Properties and Applications of High Alumina Ceramics in Industry" by F. E. V. Spencer, M.I.Prod.E., and D. Turner	548
"The Economic Background" by Professor F. W. Paish, M.C., M.A.	560
Discussion	570
1960 Associate Membership Examinations Exemptions (revised)	576

Page

Report of Fourth Conference of Engineers Responsible for Standards	580
"Poland Today" — The Secretary's Report	586
The Standing Committees, 1958 - 1959	589
Report of Meeting of Council — 24th July, 1958	590
Elections and Transfers	593
Institution Notes	595
News of Members	595
Hazleton Memorial Library — Additions	596

October

"Selling in World Markets" — A Report of the Opening Session of the Production Conference, 1958	597
Discussion	607
"The Design of Automatic Machine Tools for Electronic Control" by F. Koenigsberger, D.Sc., M.I.Mech.E., M.I.Prod.E.	610
Report and Discussion	627
"Cybernetics, Operational Research and Automation" by F. H. George, Ph.D., M.A., F.R.S.S.	634
Operational Research Case Studies by John Harling	644
Discussion	650
"Management Training in the U.S.A." by Gordon F. Hird	653
Institution Diary Dates — 1958 - 1959	658
Extracts from Region and Section Reports	659
PERA Newsletter	664
News of Members	665
Hazleton Memorial Library — Reviews and Additions	665

November

"Operational Research in Engineering Production" by N. A. Dudley, Ph.D.(Birmingham), B.Sc.(London), M.I.Prod.E.	669
"Automatic Equipment for Jobbing Work" by Ian Nickols, A.M.I.Prod.E., J. P. Udall and O. S. Puckle, M.B.E., M.I.E.E.	673
Discussion	688
"The Application of Spark Erosion Machining" by A. J. Lawrance, G.I.Mech.E., Grad.I.Prod.E.	694
"The Use of Plastics in Making Jigs, Tools and Moulds" by W. T. John	710
International Congress for Production Engineering Research	716
Institution Diary Dates — 1958 - 1959	693
News of Members	719
Hazleton Memorial Library — Additions	720

December

The Annual Dinner, 29th October, 1958	721
"Design and Performance of Two Milling Force Dynamometers" by F. Koenigsberger, D.Sc., M.I.Mech.E., M.I.Prod.E., K. D. Marwaha, M.Sc.Tech., Grad.I.Prod.E., and A. J. P. Sabberwal, M.Sc.Tech.	727
"Value Analysis — A Specialist Approach to Cost-Reduction in Industry" by J. Rawicz-Szczerbo, M.Sc., Grad.I.E.E., Grad.I.Prod.E.	743
"Cemented Carbide Tools — Their Application for Increased Productivity in Heavy and General Engineering" by D. C. Rodgers, A.M.I.Prod.E.	754
"Apprentice Training" by F. Rushton, A.M.I.Prod.E.	770
Correspondence	774
PERA Newsletter	777
Report of the Meeting of Council — 30th October, 1958	779
Elections and Transfers	781
Institution Notes	782
News of Members	782
Institution Diary Dates — 1959	783
Journal Contents — Volume 37, 1958	784
Author and Title Index to Papers — 1958	786
Subject Index to Papers — 1958	787

Author and Title

Index to Papers, 1958

Pages			Pages			Pages		
January	...	1 - 72	May	...	277 - 338	September	...	531 - 596
February	...	73 - 124	June	...	339 - 396	October	...	597 - 668
March	...	125 - 206	July	...	397 - 466	November	...	669 - 720
April	...	207 - 276	August	...	467 - 530	December	...	721 - 788

AUTHOR AND TITLE INDEX TO PAPERS PUBLISHED

- ABBEY, C. B. May 314 - 323.
 Air gauging : history and future development. (C. J. Tanner.) July 448 - 462.
 Air-operated equipment. (N. P. Watts.) August 471 - 481.
 Aircraft Production Conference. *See* Problems of Aircraft Production.
 Application of Cemented Carbide tools for increased productivity in heavy and general engineering (D. C. Rodgers.) December, 754 - 769.
 Application of spark erosion machining. (A. J. Lawrance.) November 694 - 709.
 Automatic equipment for jobbing work. (J. P. Udal.) November 673 - 693.
 BAILEY, J. A. (Communication. Viscount Nuffield Paper.) April 224.
 BARRELL, H. January 3-35.
 The bases of measurement. (H. Barrell.) January 3 - 35.
 Batch production of piston type hydraulic control valves. (J. H. Cross.) August 500 - 509.
 BRADFORD, F. April 226 - 247.
 Bray (George) Memorial Lecture. *See* George Bray Memorial Lecture.
 BUCEY, Boyd K. March 129 - 138.
 BURBIDGE, J. L. May 277 - 287.
 BURNARD, L. G. March 139 - 179.
 Business financing and the stock exchange. (Gordon Cummings.) July 397 - 401.
 Carbide and ceramic tools in the finish turning of steel : a comparative investigation. (Vladimir Solaja.) June 363 - 372.
 CARTER, F. August 510 - 522.
 Compressed Air Conference, Camborne, 1958. Papers presented. July 448 - 462 ; August 471 - 481, 482 - 489, 490 - 499.
 Conference of Engineers responsible for Standards, London, 1958. Report. September 580 - 585.
 COOK, R. N. June 341 - 362.
 COOPER, F. W. March 201.
 CROSS, J. H. August 500 - 509.
 CUMMINGS, Gordon. July 397 - 401.
 Current experimental work with sintered oxide and a cutting tool. (H. Eckersley and R. N. Cook.) June 341 - 362.
 Cybernetics, operational research and automation. (F. H. George.) October 634 - 643, 650 - 652.
 Design and performance of two milling force dynamometers. (F. Koenisberger, K. D. Marwaha and A. J. P. Sabberwal.) December, 727 - 742.
 The design of automatic machine tools for electronic control. (F. Koenisberger.) October 610 - 633.
 DIXON, E. W. May 324 - 333.
 DUDLEY, N. A. March 187 - 191 ; April 257 - 264 ; May 303 - 313 ; June 382 - 384 ; November 669 - 672.
 E. W. Hancock Paper, 1958. September 532 - 547.
 ECKERSLEY, H. June 341 - 362.
 ELTON, H. J. March 180 - 186.
 The engineering graduate : a production problem. (L. J. Kastner.) January 36 - 41.
 EVANS, J. C. (Communication. Sir Alfred Herbert Paper.) February 116.
 The fabrication of plastics. (V. E. Yarsley.) July 402 - 447.
 Fire explosion hazards in compressed air systems. (A. C. Smith and A. Thomas.) August 482 - 489.
 FRANCE, James. (Communications — Viscount Nuffield Paper.) April 223 - 224.
 FRANCE, James. The new Associate Membership Examination. March 199 - 201.
 GEORGE, F. H. Cybernetics, operational research and automation. October 634 - 643, 650 - 652.
 George Bray Memorial lecture, 1957. July 402 - 447.
 HAGUE, E. H. October 601 - 603.
 HALSBURY, Earl of. January 1 - 2, 50 ; May 277 - 287.
 HANCOCK, E. W. November 716 - 718.
 Hancock (E. W.) Paper. *See* E. W. Hancock Paper.
 HANNABY, W. A. January 42 - 49.
 HARLING, John. October 644 - 652.
 The heating and ventilating of factories : a review of developments and methods. (F. Carter.) August 510 - 522.
 Herbert (Sir Alfred) Paper. 1957. January 3 - 35.
 HEWITT, Walter. February 105 - 116.
 HIRD, Gordon F. October 653 - 658.
 HIVES, Lord. April 217 - 224.
 HODGE, James. August 490 - 499, 489.
 HUGHES, William. October 605 - 606.
 Human relations in industry : "Men, women and work". (Lewis T. Wright.) September 532 - 547.
 Industrial uses of rotary compressors. James (Hodge.) August 490 - 499, 489.
 International Congress for Production Engineering Research. Speech by E. W. Hancock. November 716 - 718.
 James N. Kirby Paper. 1957. February 73 - 83.
 JOHN, W. T. November 710 - 716.
 KASTNER, L. J. January 36 - 41.
 KELSEY, W. J. February 91 - 103.
 KIRBY (James N.) Paper. 1957. February, 73 - 83.
 KOENISBERGER, F. T. October 610 - 633. December, 727 - 742.
 LAWRENCE, A. J. November 694 - 709.
 LITTLECHILD, J. E. June 373 - 381, 384.
 Lord Sempill Paper. 1958. March 129 - 138.
 Management training in the U.S.A. : a review of teaching techniques and teachers. (Gordon F. Hird.) October 653 - 658.
 The manufacture and application of tungsten carbide in Australia. (W. J. Kelsey.) February 91 - 103.
 Manufacturing in the aeronautic age. (Boyd K. Bucey.) March 129 - 138.
 Manufacturing practice : a review of the British Aircraft Industry. (L. G. Burnard.) March 139 - 174. (K. D. Marwaha.) December.
 MARWAHA, K. D. December, 727 - 742.
 Materials Handling Convention, Leamington Spa, 1957. Report, January 54 - 55. Paper presented. February 84 - 90.
 The mixing of concrete. (C. B. Abbey.) May 314 - 323.
 The new industrial pattern of South Wales. (A. J. Nicholas.) June 339 - 40.
 New Year thoughts. (Earl of Halsbury. Leading article.) January 1 - 2, 50.
 NICHOLAS, A. J. June 339 - 340.
 NICKOLS, Ian. November 673 - 676.
 Nuffield (Viscount) Paper. 1957. April 207 - 216.
 Operation future : the engineer in a changing world. (Walter Scott.) February 73 - 83.
 Operational research case studies. (John Harling.) October 644 - 652.

- Operational research in engineering production. (N. A. Dudley.) November 669 - 672.
- Output pattern in repetitive tasks. (N. A. Dudley.) March 187 - 191 ; April 257 - 264 ; May 303 - 313 ; June 382 - 384.
- PAISH, F. W. September 560 - 575.
- Poland today : the secretary's report. (W. F. S. Woodford.) September 586 - 589.
- Problems of aircraft production, *Conference, No. 6, Southampton* 1958. March 125 - 127, 129 - 138, 139 - 174 ; April 226 - 247, 248 - 256.
- Production Conference, *London*, 1958. September 532 - 547, 560 - 575 ; October 597 - 609, 643, 610 - 633, 634 - 643, 644 - 649.
- Production problems associated with industrial atomic energy. (J. E. Littlechild.) June 373 - 381, 384.
- Properties and applications of high alumina ceramics in industry. (F. E. V. Spencer and D. D. Turner.) September 548 - 559, 547.
- PUCKLE, O. S. November 681 - 687.
- RODGERS, D. C. December 754 - 769.
- RAWICZ-SZCZERBO, J. December 743 - 753.
- SABBERWAL, A. J. P. December 727 - 742.
- SCOTT, Walter. Operation future : the engineer in a changing world. February 73 - 83.
- Selling in world markets. October 547 - 609.
- Sempill (Lord) Paper. 1958. March 129 - 138.
- Sir Alfred Herbert Paper. 1957. January 19 - 35. Communications. February 116.
- SMITH, A. C. August 482 - 489.
- SOLAJA, Vladimir. June 363 - 372.
- Some aspects of the design development and manufacture of the P.I. Wing. (F. Bradford and G. H. Taylor.) April 226 - 247.
- SPENCER, F. E. V. September 548 - 559, 547.
- TANNER, C. J. July 448 - 462.
- TAYLOR, G. H. April 226 - 247.
- TAYLOR, Sir John. October 603 - 605.
- Technical education for production engineers. (Lord Hives.) April 217 - 224.
- THOMAS, A. August 482 - 489.
- Three-dimensional tape-controlled inspection. (H. J. Elton.) March 180 - 186.
- TOCHER, K. D. February 84 - 90.
- TURNER, D. September 548 - 559, 547.
- UDAL, J. P. November 676 - 680.
- Use of plastics in making jigs, tools and moulds. (W. T. John.) November 710 - 716.
- Value analysis : a specialist approach to cost-reduction in industry. (J. Rawicz-Szczerbo.) December 743 - 753.
- The varied application of drilling machines in relation to other production. (W. A. Hannaby.) January 42 - 49.
- Viscount Nuffield Paper. 1957. April 207 - 216.
- WATTS, N. P. August 471 - 481.
- WHITTAKER, Thomas. October 599 - 600.
- WOODFORD, W. F. S. September 586 - 589.
- Work measurement and its uses in management control. (Walter Hewett.) February 105 - 116.
- WRIGHT, Lewis. September 532 - 547.
- YARSLEY, V. E. July 402 - 441.

Subject Index to Papers, 1958

ACCIDENT PREVENTION.

Smith, A. C. and Thomas, A. August 482 - 489.

AIR COMPRESSORS.

Hodge, James. August 490 - 499, 489.

AIRCRAFT MANUFACTURE.

Bradford, F. and Taylor, G. H. April 226 - 247.

Bucey, Boyd K. March 129 - 138.

Burnard, L. G. March 139 - 179.

Problems of Aircraft Production Conference. Combined Discussion. April 248 - 256.

ALUMINIUM OXIDES.

Eckersley, H. and Cook, R. N. June 341 - 362.

Spencer, F. E. V. and Turner, D. September 548 - 559, 477.

ASSOCIATE MEMBERSHIP EXAMINATION.

Cooper, F. W. March 201.

France, James. March 199 - 201.

ATOMIC ENERGY PRODUCTION.

Littlechild, J. E. June 373 - 381, 384.

BATCH PRODUCTION.

Automatic equipment for jobbing work. November 677 - 693.

CARBIDES. *See* Cutting Tools, Carbide and Ceramic ; Tungsten Carbide.

CERAMIC CUTTING TOOLS.

Eckersley, H. and Cook, R. N. June 341 - 362.

Solaja, Vladimir. June 363 - 372.

CERAMICS, Alumina.

Eckersley, H. and Cook, R. H. June 341 - 362.

Spencer, F. E. V. and Turner, D. September 548 - 559, 477.

COMPRESSED AIR. *See* Air Compressors ; Pneumatic Equipment.

CONCRETE MIXING.

Abbey, C. B. May 314 - 323.

CONTROL, ELECTRONIC—Machine Tools. *See* Machine Tool Control, Electronic.

COST REDUCTION. *See*

CUTTING TOOLS, Carbide and Ceramic.

Eckersley, H. and Cook, R. N. June 341 - 372.

Rodgers, D. C. December 743 - 753.

Solaja, Vladimir. June 363 - 372.

CUTTING TOOLS, Plastics.

John, W. T. November 710 - 716.

CUTTING TOOLS, Sintered Oxide.

Eckersley, H. and Cook, R. N. June 341 - 362.

CYBERNETICS.

George, F. H. October 634 - 643, 650 - 652.

DRILLING MACHINES.

Hannaby, W. A. January 42 - 49.

DYNAMOMETERS, Milling Machine.

Koenisberger, F., Marwaha, K. D. and Sabberwal, A. J. P. December 727 - 742.

EDUCATION, Technical. *See also* Management training : Universities and industry.

Halsbury, *Earl of*. May 277 - 287.

Hives, *Lord*. April 207 - 224.

ELECTRONIC CONTROL OF MACHINE TOOLS. *See* Machine Tool Control, Electronic.

EXAMINATION, ASSOCIATE MEMBERSHIP.

Cooper, F. W. March 201.

France, James. March 199 - 201.

List of exemptions. August 467 - 470. *Idem* September 576 - 579.

ENGINEERS AND SOCIETY.

Scott, Walter. February 73-83

FINISHING, Steel.

Solaja, Vladimir. June 363 - 372.

FIRE PREVENTION.

Smith, A. C. and Thomas, A. August 482 - 489.

FOREMANSHIP.

Dixon, E. W. May 324 - 333.

GAUGING, PNEUMATIC.

Tanner, C. J. July 448 - 462.

HEATING AND VENTILATING.

Carter, F. August 510 - 522.

HUMAN RELATIONS.

Wright, Lewis. September 532 - 547.

HYDRAULIC VALVES—Manufacture.

Cross, J. H. August 500 - 509.

INDUSTRY—Wales.

Nicholas, A. J. June 339 - 340.

INSPECTION, Tape controlled.

Elton, H. J. March 180 - 186.

JAMES N. KIRBY PAPER—History.

February 75.

MACHINE TOOL CONTROL, Electronic.

Koenisberger, F. T. October 610 - 633.

Puckle, O. S. November 681 - 687.

MACHINE TOOL CONTROL, Numerical.

Puckle, O. S. November 681 - 687.

MACHINE TOOLS. *See* Drilling Machines ; Machine Tool Control.

MACHINING, Spark erosion.

Lawrance, A. J. November 694 - 709.

MANAGEMENT TRAINING—United States of America.

Hird, Gordon F. October 653 - 658.

MARKETS.

Selling in world markets. October 547 - 609.

MATERIALS HANDLING.

Materials Handling Convention Report. January 54 - 55.

Tocher, K. D. February 84 - 90.

MATERIALS HANDLING—Press Shops.

Udal, J. P. November 676 - 680.

MEASUREMENT. *See* Gauging, Pneumatic ; Metrology.

METROLOGY. *See also* Gauging, Pneumatic ; Dynamometers.

Barrell, H. January 3 - 35 ; February 116.

MILLING MACHINE CONTROL.

Puckle, O. S. November, 681 - 687.

MILLING MACHINE DYNAMOMETERS. *See*

Dynamometers, Milling Machine.

NUCLEAR POWER PRODUCTION.

Littlechild, J. E. June 373 - 381, 384.

OPERATIONAL RESEARCH.

Dudley, N. A. November 669 - 672.

George, F. H. October 634 - 643, 650 - 652.

Harling, John. October 644 - 652.

OXIDES. *See* Aluminium oxides.

PLASTICS—Fabrication.

Yarsley, V. E. July 402 - 447.

PLASTICS TOOLS.

John, W. T. November 710 - 716.

PNEUMATIC EQUIPMENT. *See also* Air Compressors ; Pneumatic Gauging.

Watts, N. P. August 471 - 481.

PNEUMATIC EQUIPMENT—Fire Hazards.

Smith, A. C. and Thomas, A. August 482 - 489.

PNEUMATIC GAUGING.

Tanner, C. J. July 448 - 462.

POLAND.

Woodford, W. F. S. September 586 - 589.

PRESS SHOPS—Materials Handling.

Udal, J. P. November 676 - 680.

PRODUCTION ENGINEERING RESEARCH ASSOCIATION OF GREAT BRITAIN—History.

Hancock, E. W. November 716 - 718.

PRODUCTION PLANNING AND CONTROL.

Burbidge, J. L. May 288, 302.

PROFESSIONAL STATUS.

Halsbury, *Earl of*. May 277 - 287.

REPETITIVE WORK—Work Study.

Dudley, N. A. March 187 - 191 ; April 257 - 264 ; May 303 - 313 ; June 382 - 384.

SAFETY PRECAUTIONS.

Smith, A. C. and Thomas, A. August 482 - 489.

SINTERED ALUMINIUM OXIDES. *See* Aluminium Oxides.

SOCIOLOGY. *See* Engineers and Society ; Human relations.

SPARK EROSION MACHINING.

Lawrance, A. J. November 694 - 709.

STANDARDISATION.

Conference of Engineers responsible for Standards. September 580 - 585.

STEEL—Surface Finish.

Solaja, Vladimir. June 363 - 372.

STOCK EXCHANGE.

Cummings, Gordon. July 397 - 401.

SURFACE FINISH—Steel.

Solaja, Vladimir. June 363 - 372.

TAPE CONTROLLED INSPECTION.

Elton, H. J. March 180 - 186.

JAMES N. KIRBY PAPER—History.

February, 75.

TECHNICAL EDUCATION. *See also* Management Training : Universities and Industry.

Halsbury, *Earl of*. May 277 - 287.

Hives, *Lord*. April 207 - 224.

TIME AND MOTION STUDY. *See* Work Study.

TOOLS. *See* Cutting Tools.

TUNGSTEN CARBIDE. *See also* Cutting Tools, Carbide and ceramic.

Kelsey, W. J. February 91 - 103.

UNITED STATES OF AMERICA—Management Training.

Hird, Gordon F. October 653 - 658.

UNIVERSITIES AND INDUSTRY.

Kastner, L. J. January 36 - 41.

VALUE ANALYSIS.

Rawicz-Szczerbo, J. December

VALVES, Hydraulic—Manufacture.

Cross, J. H. August 500 - 509.

VENTILATING.

Carter, F. August 510 - 522.

WALES—Industry.

Nicholas, A. J. June 339 - 340.

WORK MEASUREMENT.

Hewett, Walter. February 105 - 116.

WORK STUDY—Repetitive work.

Dudley, N. A. March 187 - 191 ; April 257 - 264 ; May 303 - 313 ; June 382 - 384.

